

SPLIT-2

Work Order ID 126259-2

126259

Page 1

Tuesday, November 04, 2014 11:06:05 AM

Item ID: D6020-160

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Material

Start Date: 11/14/2014 Start Qty: 25.00

25

Cust Item ID:

Required Date: 11/14/2014 Req'd Qty: 25.00

25

Customer:

Reference:

Approvals:

Process Plan: CX

Date: 11/11/04

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D6020

pa3

110

PURCHASING

0.00

110

Purchasing

Memo

0.00

Purchasing

Issue P/O: 24042
Manufacture as per dwg D6020

CX 11/11/04

120

Receive & Inspect for Damage & Mat'l Certs

0.00

120

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

28x 8014-12-17

130

QC6- Inspect dimensions to drawing

0.00

130

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg

(23) 15-01-16

DAS
9
9-89

240
0
240

Work Order ID 126259

Tuesday, November 04, 2014 11:04:12 AM

126259

Page 2

Item ID: D6020-160 Accept *N900040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Crosstube Material

Start Date: 11/14/2014 Start Qty: 25.00 *25*

Required Date: 11/14/2014 Req'd Qty: 25.00 *25*

Reference: Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Outsource process - Heat Treat	0.00							
140									
Outsource I	Memo	0.00							
Outsource process - Heat Treat	Issue p/o: _____ Ensure Material certification	N/A							CZ 15/01/19
150	Receive & Inspect for Damage & Mat Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging	Ensure Material certification	N/A							CZ 15/01/19
160	QC6- Inspect dimensions to drawing	0.00							
160									
QC	Memo	0.00							
Quality Control		N/A							CZ 15/01/19

126259

Tuesday, November 04, 2014 11:04:12 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date:	11/14/2014	Start Qty:	25.00	*25*
Required Date:	11/14/2014	Req'd Qty:	25.00	*25*

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

[illegible]

15/1/19 JJ

15-1-10

Picklist Print

Tuesday, November 04, 2014 11:04:11 AM

Page 1

Work Order ID: 126259

126259

Parent Item: D6020-160

D6020-160

Parent Item Name: Crosstube Material

Start Date: 11/14/2014

Required Date: 11/14/2014

Start Qty: 25.00

Required Qty: 25.00

Comments: IPP REV:A 13.03.06 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6020-160P

Purchased

No

Each

0.0000

25

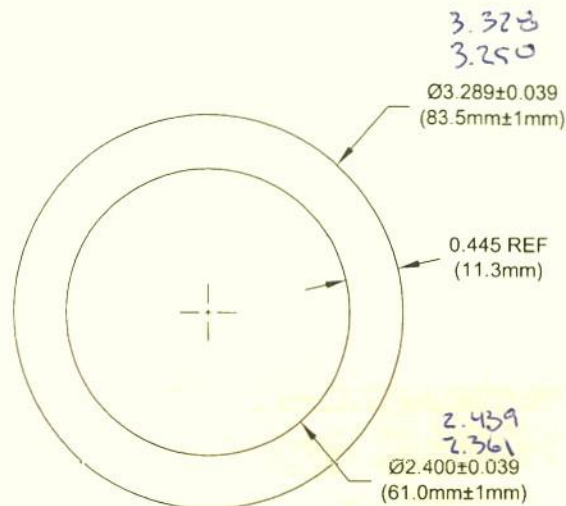
D6020-160P

Crosstube Material

**

28x SP14-12-17.

SPECIFICATION CONTROL DRAWING



NOTES

1) D6020-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 160" LONG TUBE: D6020-160

2) MATERIAL: 17-4PH SEAMLESS STAINLESS STEEL TUBE PER ASTM A564
Ø3.289 O.D. x Ø2.400 I.D.

HEAT TREAT TO H1025 CONDITION (HRc 34-42):
MIN. ULTIMATE TENSILE STRENGTH = 155 ksi
MIN. YIELD TENSILE STRENGTH = 145 ksi

3) TOLERANCES ARE AS FOLLOWS:

ECCENTRICITY: 15% (+/-0.066" WALL)

LENGTH: XXX +0.188"/-0.000"

STRAIGHTNESS: 0.012" DEVIATION / 12" LENGTH

4) ALL DIMENSIONS ARE IN INCHES

5) TUBE MUST BE PICKLED OR ELECTROPOLISHED TO BE SMOOTH AND FREE FROM SCALE.

6) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

02/14/11/04
W10.126259

RELEASED
2013-08-14

REV	NEW ISSUE	CP	13.04.24
REV	DESCRIPTION	BY	DATE
DESIGN	92		
DRAWN	92		
CHECKED	AL		
MFG APPR			
APPROVED			
DE APPR			
DATE	13.04.24		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D6020 REV. A
SHEET 1 OF 1

TITLE CROSSTUBE MATERIAL SCALE NTS

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO24042

Purchase Order Date 5/1/2014
PO Print Date 5/13/2014

Page Number 1 of 2

Order From :
TUBE HOLLOW INTERNATIONAL
39 ENTERPRISE DRIVE SUITE 2

WINDHAM, MAINE 04062
UNITED STATES

VU-TH101

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name		Buyer	
Vendor Phone	207-892-8899	Customer POID	
Ship To Contact		Customer Tax #	10127-2607
Ship To Phone		Terms	Net 30
Ship Via:	Journey Freight collect	Currency	USD
Ship Acct:		FOB	EXW - (Ex Works)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	
	D6020 160P	Crosstube Material	8/8/2014 Yes 8/8/2014		25.00 Each	\$3,524.30	\$1

Manufacture as per Drwaing D6020 rev.A

NOTE
Please advise that one length can be provided as part of FAI requirements, balance to follow.

recd 1x

SP14-11-1

recd 28x

SP14-12-1

Line Total: \$1

Note:

TUBE HOLLOW INTERNATIONAL

39 ENTERPRISE DRIVE
SUITE 2
WINDHAM, ME 04062
PHONE: 207-892-8899 FAX: 207-892-8863

PACKING LIST

Packlist ID: 01175
Date: 12/5/2014
Page: 1

Sold To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

			CUSTOMER PO		PAYMENT TERMS		F.O.B.	
			24042		Net 30		WINDHAM	
SALES REP ID			SHIPPING METHOD		SHIP DATE		OUR ORDER NUMBER	
EVAN			TO BE DETERMINED		12/5/2014		DAR140149	
QUANTITY								
ORD	SHF	BCK	CUSTOMER PART ID		DESCRIPTION			

29.00 28.00 0.00 CROSSTUBE

160" CROSSTUBE
Drawing: D6020
Rev No:
Unit of Measure: EA

28 PIECES OF 17-4 MATERIAL, MACHINED PER DRAWING
D6020 REV A

SERIAL NUMBERS, HEAT LOT# 263915

38B 38C 38D 38E 38K 39B 39C 39D 39E 39X 40B 40C 40D
40E 40X

SERIAL NUMBERS, HEAT LOT# 263992

1D 1E 1X 2D 2X 3B 3X 4C 4D 4X 5D 5E 5X

RE: THI WO# 140516/01

THANK YOU FOR THIS ORDER

RECEIVED BY: _____

 **SCANNED**

INVOICE

**TUBE HOLLOW
INTERNATIONAL**

39 Enterprise Drive # 2, Windham, ME 04062
Phone: 207-892-8899 Fax: 207-892-8863

Invoice ID: 01094
Date: 12/5/2014
Order No: DAR140149
Page No: 1
F.O.B: WINDHAM

Sold To

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

		CUSTOMER PO		PAYMENT TERMS		FREIGHT TERMS	
		24042		Net 30		Freight: Collect	
SALES REP ID		SHIPPING METHOD		SHIP DATE		INVOICE DUE DATE	
EVAN		TO BE DETERMINED		12/5/14		1/4/15	
QUANTITY				T		UNIT	
ORD	SH	BCK	PART	DESCRIPTION		PRICE	EXTENDED PRICE

29	28	0	CROSSTUBE			\$3,524.30	\$98,680.40
----	----	---	-----------	--	--	------------	-------------

160" CROSSTUBE
Packlist #: 01175
P.O. Line#: 1.00

28 PIECES OF 17-4 MATERIAL, MACHINED
PER DRAWING D6020 REV A

SERIAL NUMBERS, HEAT LOT# 263915: 38B
38C 38D 38E 38K 39B 39C 39D 39E 39X 40B
40C 40D 40E 40X

SERIAL NUMBERS, HEAT LOT# 263992: 1D
1E 1X 2D 2X 3B 3X 4C 4D 4X 5D 5E 5X

RE: THI WO# 140516/01

THANK YOU FOR THIS ORDER

SUB TOTAL: \$98,680.40

TOTAL AMOUNT DUE: \$98,680.40

Please Remit To: Tube Hollows International
39 Enterprise Drive # 2
Windham, ME 04062

We hereby certify that these goods were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.

NOTE: NO CLAIMS
ALLOWED UNLESS
MADE WITHIN 10 DAYS

Original Invoice

SCANNED



STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6020-160P
Material: 17-4 PH
Cert. Report #: 5048780
Heat #: 263992
Drawing #: D6020 Rev. A
P.O #: PO24042 L/I 1
THI WO#: 140516/01
Qty: 1

SN: 2C

The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

Comments: This is a First Article piece. Please reference Material Certification 5048780.

Revised to include Certification Report #.

Inspected / Certified By:

Brian J. Sylvester

Brian J. Sylvester,

Quality Dept.

December 17, 2014

PENN STAINLESS PRODUCTS, INC.

190 Kelly Road, Quakertown, PA 18951

TUBE HOLLOW INTERNATIONAL

STNLS ROUND BAR SRB 17-4 H1025 3.5" x 13'4"

PO/Rel: ES-0514-249/BO

Contact: TODD

Inv: 1131383

Heat: 263992

Date: 09/22/2014

Certificate of Mill Test Results



VALBRUNA

SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE, IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801

Product Certification Report

Report Number: **5048780**

Certified on Sep 17, 2014 Page 1 of 2

Order I.D. 1401488 001		Order Date 5/30/14		Commodity Code	
Dim 1 3.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 263992	Customer I.D. 001417	Customer Purchase Order P010303
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 160.000 Min. 162.000 Max.			Bill of Lading# 422963	Weight	

Attention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062

Sold
To

VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Lifts: 0055 0060 0061

Condition H-1025

AMS H 6875B

ASTMA 564-13

ASMESA 564 13

AMS 5643T (except finish)

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.039	.48	.024	.023	.42	15.69	4.35	.19	3.40	.03	.26	.001	.261

ROCKWELL HARDNESS ASTM E18-14

HRC
38.0

TENSILE PROPERTIES ASTM E8-13a

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
163300	147500	19.9	56.9

CHARPY V NOTCH E23-12c

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	AVG FT LB	TEST(F)
70	56	55	58	24	26	24	56	70

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .06 .04

PRODUCTION HEAT TREATMENT

SOL-ANN(F)	SOL-ANN(HR)	QUENCH	AGE(F)	AGE(HR)	QUENCH
1900	6.00	Air	1025	4	Air

MACRO ASTM E340-13/E381-01

MACRO

OK

OK

OK

PERCENT FERRITE (AMS 2315)

% FERRITE Etchant Magnification X

AVG .1 Marbles 100

Free of mercury and low melting alloy contamination.

No welding or weld repair done.

Reduction ratio 5 To 1 Min.

Specimen tested at longitudinal, mid-radius, room temperature.

Electric Furnace melted; AOD refined.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

email: DHackett@valbruna.us

Dennis Hackett

PENN STAINLESS PRODUCTS, INC.
 190 Kelly Road, Quakertown, PA 18951
 TUBE HOLLOW INTERNATIONAL
 STNLS ROUND BAR SRB 17-4 H1025 3.5" x 134"

Certificate of Mill Test Results

Inv: 1131383 Date: 09/22/2014
 Heat: 263992

Contact: TODD

PO/Rel: ES-0514-249/BO



VALBRUNA

SLATER STAINLESS, INC.
 2400 TAYLOR STREET WEST - PO BOX 630
 FORT WAYNE IN 46802 USA
 PHONE 260.434.2800 - FAX 260.434.2901

Product Certification Report

Report Number: **5048780**

Certified on Sep 17, 2014 Page 2 of 2

Order I.D. 1401488 001		Order Date 5/30/14		Commodity Code	
Dim 1 3.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 263992	Customer I.D. 001417	Customer Purchase Order P010303
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (inches) 160.000 Min. 162.000 Max.			Bill of Lading # 422963	Weight	

Ship To

Attention: Penn Stainless Prod
 Tube Hollows International
 39 Enterprise Dr.
 Suite 2
 Windham, ME 04062

Sold To

VALBRUNA STAINLESS, INC.
 2400 TAYLOR STREET WEST
 FORT WAYNE, IN 46802

Specimen size: tensile - .505 in. charpy - 10mm X 10mm
 Annealed soak times controlled by atmosphere thermocouples. Age soak times by contact thermocouples.
 Material produced in accordance with VSSI Quality Policy Manual Revision 6, dated 7/07/2011.
 Ultrasonic tested to ASTM 388 per acceptance level API 6A PSL3 satisfactory.
 Melted in Italy per DFARS clause 225.872.
 Chemical testing to one or more of the listed ASTM methods:
 E415-14, E1019-11, E1086-14.
 Location of tensile fracture: inside middle of gage length.
 Chemical Analysis performed at Acciaierie Valbruna, Italy.
 No mercury or low melting alloy contamination. No weld repair.
 Material melted in Italy, manufactured in the United States.
 Material conforms to listed specifications and is DFARS compliant.
 Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett
 Dennis Hackett

email: DHackett@valbruna.us



STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6020-160P
Material: 17-4 PH
Cert. Report #: See Table below
Heat #: See Table below
Drawing #: D6020 Rev. A
P.O #: PO24042 L/I 1
THI WO#: 140516/01
Qty: 28

Report #:	Heat #:	SN #:
5046310	263915	38B 38C 38D 38E 38K 39B 39C 39D 39E 39X 40B 40C 40D 40E 40X
5048780	263992	1D 1E 1X 2D 2X 3B 3X 4C 4D 4X 5D 5E 5X

The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

Comments: Revised to include Certification Report #.

Inspected / Certified By:

Brian J. Sylvester

Brian J. Sylvester,

Quality Dept.

December 17, 2014

PENN STAINLESS PRODUCTS, INC.

190 Kelly Road, Quakertown, PA 18951

TUBE HOLLOW INTERNATIONAL

STNLS ROUND BAR SRB 17-4 H1025 3.5" x 13'4"

PO/Rel: ES-0514-249/BO

Contact: TODD

Inv: 1131383
Heat: 263992

Date: 09/22/2014

Certificate of Mill Test Results



VALBRUNA

SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE, IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801

Product Certification Report

Report Number: **5048780**

Certified on Sep 17, 2014 Page 1 of 2

Order I.D. 1401488 001		Order Date 5/30/14		Commodity Code	
Dim 1 3.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 263992	Customer I.D. 001417	Customer Purchase Order P010303
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 160.000 Min. 162.000 Max.			Roll of Ladings 422963	Weight	

Attention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062

Sold
To

VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Lifts: 0055 0060 0061

Condition H-1025

AMS H 6875B

ASTMA 564-13

ASMESA 564 13

AMS 5643T (except finish)

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.039	.48	.024	.023	.42	15.69	4.35	.19	3.40	.03	.26	.001	.261

ROCKWELL HARDNESS ASTM E18-14

HRC
38.0

TENSILE PROPERTIES ASTM E8-13a

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
163300	147500	19.9	56.9

CHARPY V NOTCH E23-12c

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	AVG FT LB	TEST(F)
70	56	55	58	24	26	24	56	70

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .06 .04

PRODUCTION HEAT TREATMENT

SOL-ANN(F)	SOL-ANN(HR)	QUENCH	AGE(F)	AGE(HR)	QUENCH
1900	6.00	Air	1025	4	Air

MACRO ASTM E340-13/E381-01

MACRO

OK

OK

OK

PERCENT FERRITE (AMS 2315)

% FERRITE Etchant Magnification X

AVG 1 Marbles 100

Free of mercury and low melting alloy contamination.

No welding or weld repair done.

Reduction ratio 5 To 1 Min.

Specimen tested at longitudinal, mid-radius, room temperature.

Electric Furnace melted; AOD refined.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

email: DHackett@valbruna.us

Dennis Hackett

Contact: TODD

PO/Rel: ES-0514-249/BO

Date: 09/22/2014

Inv: I131383

Heat: 263992



VALBRUNA

SLATER STAINLESS, INC.
 2400 TAYLOR STREET WEST - PO BOX 630
 FORT WAYNE, IN 46802 USA
 PHONE 260.434.2800 - FAX 260.434.2801

Product Certification Report

Report Number: 5048780

Certified on Sep 17, 2014 Page 2 of 2

Order I.D. 1401488 001		Order Date 5/30/14		Commodity Code	
Dim 1 3.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 263992	Customer I.D. 001417	Customer Purchase Order P010303
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (inches) 160.000 Min. 162.000 Max.			Bill of Lading # 422963	Weight	

Ship To

Attention: Penn Stainless Prod
 Tube Hollows International
 39 Enterprise Dr.
 Suite 2
 Windham, ME 04062

Sold To

VALBRUNA STAINLESS, INC.
 2400 TAYLOR STREET WEST
 FORT WAYNE, IN 46802

Specimen size: tensile - .505 in. charpy - 10mm X 10mm
 Annealed soak times controlled by atmosphere thermocouples. Age soak times by contact thermocouples.
 Material produced in accordance with VSSI Quality Policy Manual Revision 6, dated 7/07/2011.
 Ultrasonic tested to ASTM 388 per acceptance level API 6A PSL3 satisfactory.
 Melted in Italy per DFARS clause 225.872.
 Chemical testing to one or more of the listed ASTM methods:
 E415-14, E1019-11, E1086-14.
 Location of tensile fracture: inside middle of gage length.
 Chemical Analysis performed at Acciaierie Valbruna, Italy.
 No mercury or low melting alloy contamination. No weld repair.
 Material melted in Italy, manufactured in the United States.
 Material conforms to listed specifications and is DFARS compliant.
 Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.
 I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett

email: DHackett@valbruna.us

Dennis Hackett

**VALBRUNA**SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5046310**

Certified on Sep 11, 2014 Page 1 of 2

Order I.D. 1401488 001		Order Date 5/30/14		Commodity Code	
Dim 1 3.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 263915	Customer I.D. 001417	Customer Purchase Order P010303
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 160.000 Min. 162.000 Max.			Bill of Lading # 422900	Weight	

Ship
ToAttention: Penn Stainless Prod
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062Sold
ToVALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802Lifts: **0066 0067**

Condition H-1025

AMS H 6875B

ASTMA 564-13

ASMESA 564 13

AMS 5643T (except finish)

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.038	.47	.023	.022	.45	15.79	4.43	.15	3.37	.03	.27	.000	.270

ROCKWELL HARDNESS ASTM E18-14

HRC

40.0

TENSILE PROPERTIES ASTM E8-13a

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
164100	158700	18.9	58.6

CHARPY V NOTCH E23-12c

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	AVG FT LB	TEST(F)
70	50	52	52	13	13	14	51	70

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .06 .04

PRODUCTION HEAT TREATMENT

SOL-ANN(F)	SOL-ANN(HR)	QUENCH	AGE(F)	AGE(HR)	QUENCH
1900	6.75	Air	1025	4	Air

MACRO ASTM E340-13/E381-01

MACRO

OK

OK

OK

PERCENT FERRITE (AMS 2315)

% FERRITE Etchant Magnification X

AVG .3 Marbles 100

Free of mercury and low melting alloy contamination.

No welding or weld repair done.

Reduction ratio 5 To 1 Min.

Specimen tested at longitudinal, mid-radius, room temperature.

Electric Furnace melted; AOD refined.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: Dlhackett@valbruna.us

Dennis Hackett

**VALBRUNA**SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE, IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5046310**

Certified on Sep 11, 2014 Page 2 of 2

Order I.D. 1401488 001		Order Date 5/30/14		Commodity Code	
Dim 1 3.5000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 263915	Customer I.D. 001417	Customer Purchase Order P010303
Product Shape Rounds		Product Surface HR & Rough Turned			Customer Grade 17-4
Length (inches) 160.000 Min. 162.000 Max.			Bill of Lading # 422900	Weight	

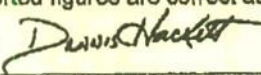
**Ship
To**Attention: Penn Stainless Prod.
Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME 04062**Sold
To**VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Specimen size: tensile - .505 in. charpy - 10mm X 10mm
Annealed soak times controlled by atmosphere thermocouples. Age soak times by contact thermocouples.
Material produced in accordance with VSSI Quality Policy Manual Revision 6, dated 7/07/2011.
Ultrasonic tested to ASTM 388 per acceptance level API 6A PSL3 satisfactory.
Melted in Italy per DFARS clause 225.872.
Chemical testing to one or more of the listed ASTM methods:
E415-14, E1019-11, E1086-14.
Location of tensile fracture: inside middle of gage length.
Chemical Analysis performed at Acciaierie Valbruna, Italy.
No mercury or low melting alloy contamination. No weld repair.
Material melted in Italy, manufactured in the United States.
Material conforms to listed specifications and is DFARS compliant.
Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

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I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: DHackett@valbruna.us


Dennis Hackett



VALBRUNA

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 630
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801

Send To: Tube Hollows International
39 Enterprise Dr.
Suite 2
Windham, ME

NOTE CAS. # IS INDICATED - IF
INGREDIENT IS SUBJECT TO EPA
SARA, TITLE III, SECTION 313,
REPORTING REQUIREMENTS.

MATERIAL SAFETY DATA SHEET

DATE: 07/15/04

SECTION I

MANUFACTURER'S NAME: VALBRUNA SLATER STAINLESS, INC.

ADDRESS: 2400 TAYLOR STREET, WEST EMERGENCY TELEPHONE: 1-260-434-2838

CITY, STATE, ZIP: FORT WAYNE, INDIANA USA 46802

PRODUCT CLASS: PRIMARY STEEL MANUFACTURER'S CODE IDENTIFICATION: SIC-33

TRADE NAME: All Steel Alloy Grades STEEL, ALLOY: All Grades

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	TYPICAL PERCENT	OSHA	PEL mg/m ³	ACGIH	TLV mg/m ³
Iron	2.50 to 98.84	10.0		5.0	
Carbon	.015 to 1.48	3.5		3.5	
Manganese 7439-96-5	.06 to 1.0	1.0		5.0 (1.0 fume)	
Silicon	.01 to 3.3	10.0		10.0	
Chromium 7440-47-3	.2 to 25	.5		.5	
Nickel 7440-02-0	.2 to 78	1.0		1.0	
Molybdenum 1313-27-5	.06 to 8.75	10.0		10.0	
Copper 7440-50-8	.2 to 31.5	.1 (1.0 Dust)		.2 (1.0 Dust)	
Cobalt 7440-48-4	= < .5	.05		.05	
Titanium	= < 2.20	10.0		10.0	
Columblum	= < 3.5	N/A		N/A	
Tungsten	= < 3.0	5.0		5.0	
Vanadium 7440-62-2	= < 1.4	.05		.05	

SECTION III - PHYSICAL DATA

BOILING RANGE ☐ N/A VAPOR DENSITY ☐ N/A HEAVIER ☐ N/A LIGHTER THAN AIR

EVAPORATION RATE: ☐ N/A FASTER ☐ N/A SLOWER THAN ETHER PERCENT VOLATILE BY VOLUME ☐ N/A

WEIGHT PER GALLON ☐ N/A

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT CATEGORY: ☐ N/A FLASH POINT: ☐ N/A LEL: ☐ N/A

EXTINGUISHING MEDIA: ☐ N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS: ☐ N/A

SPECIAL FIRE FIGHTING PROCEDURES: ☐ N/A

SECTION V - HEALTH HAZARD DATA

THIS PRODUCT, IN ITS PRESENT STATE, DOES NOT PRESENT ANY PHYSICAL OR HEALTH HAZARDS. VARIOUS PROCESSES ON THIS PRODUCT, SUCH AS GRINDING, WELDING, FORGING, AND MACHINING MAY PRODUCE DUSTS, FUMES, ETC.

Primary route of Entry

Inhalation ☒ Skin Contact ☐ Eye Contact ☐ Ingestion ☐

These dusts or fumes may contain chromium, nickel and copper, as well as other elements. High exposures may produce respiratory disease and/or eye irritation. The permissible exposure levels (PEL) and threshold limit values (TLV) for each of the components of this product are listed on the reverse side. If the levels or values on any of the components are expected to be exceeded during a manufacturing process, the use of an approved respirator is recommended, if ventilation is not possible.

If the exposures are all below each of the (PEL)'s and (TVL)'s, manufacturing processes should not present any health risk.

Emergency and first aid procedures are N/A for this product in its present state. For overexposure to dust, fumes, etc., remove person to fresh air. If there are breathing problems, administer artificial respiration and seek medical attention. Certain components, such as chromium and nickel compounds, have been listed in the recent reports on carcinogens in the National Toxicology Program (NTP) and are listed as human carcinogens by the International Agency for Research on Cancer (IARC).

SYMPTOMS OF OVEREXPOSURE:

ACUTE: Inhalation of high concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of iron oxides may also possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, Lead and/or Zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

CHRONIC: Excessive and repeated overexposure of nickel and chromium can cause various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract. Both chromium and nickel have been associated with upper respiratory cancer. Excessive and repeated overexposure of iron fumes can cause siderosis. Excessive and prolonged inhalation of manganese fumes can cause bronchitis, pneumonitis, lack of coordination.

SECTION VI - REACTIVITY DATA

STABILITY: ☐ UNSTABLE ☒ STABLE CONDITIONS TO AVOID:

INCOMPATIBILITY (MATERIALS TO AVOID): N/A

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: N/A

WASTE DISPOSAL METHOD FOR DISPOSAL OF THIS MATERIAL AS A WASTE, ACT IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL WASTE MANAGEMENT REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: IF PEL's and TLV's are exceeded, use approved NIOSH respirator.

VENTILATION: LOCAL EXHAUST IF PEL's and TLV's exceeded.

PROTECTIVE GLOVES: NONE

EYE PROTECTION: EYE GLASSES OR GOGGLES, AS NEEDED.

OTHER PROTECTIVE EQUIPMENT: NONE

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: N/A



PROTECTED (When Completed)

CERTIFICATE OF ORIGIN

(Instructions Attached)

Please print or type

1 Exporter's Name and Address: Tube Hollows International 39 Enterprise Dr. Suite 2 Windham, ME	2 Blanket Period: From <table border="1"> <tr> <td>0</td><td>DO</td><td>1</td> <td>0</td><td>MM</td><td>1</td> <td>1</td><td>YY</td><td>4</td> </tr> </table> To <table border="1"> <tr> <td>3</td><td>DO</td><td>1</td> <td>1</td><td>MM</td><td>2</td> <td>1</td><td>YY</td><td>4</td> </tr> </table>	0	DO	1	0	MM	1	1	YY	4	3	DO	1	1	MM	2	1	YY	4
0	DO	1	0	MM	1	1	YY	4											
3	DO	1	1	MM	2	1	YY	4											
3 Producer's Name and Address: Valbruna Slater Stainless, Inc. 2400 Taylor Street West Fort Wayne, IN 46802	4 Importer's Name and Address:																		
Tax Identification Number: 04-3784903	Tax Identification Number:																		

5	6	7	8	9	10
Description of Good(s)	HS tariff Classification Number	Preference Criterion	Producer	Net Cost	Country of Origin
Steel Bar or Rod - Stainless	7222.11 thru 7222.40	B	Yes	No	US

I certify that: - the information on this document is true and accurate and I assume the responsibility for proving such representations. I understand that I am liable for any false statements or material omissions made on or in connection with this document; - I agree to maintain, and present upon request, documentation necessary to support this Certificate, and to inform, in writing, all persons to whom the Certificate was given of any changes that would affect the accuracy or validity of this Certificate; - the goods originated in the territory of one or more of the Parties, and comply with the origin requirements specified for those goods in the North American Free Trade Agreement, and unless specifically exempted in Article 411 or Annex 401, there has been no further production or any other operation outside the territories of the Parties; and - this Certificate consists of _____ pages, including all attachments.			
Authorized Signature: 		Company: Valbruna Slater Stainless, Inc.	
Name: Mike Whedon		Title: Sched./Shipping/Inventory Supr.	
Date: DD MM YY 01 01 01	Telephone: 260-434-2912	Fax: 260-434-2986	

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6020-160
DATE: 15-01-16

PO / BATCH NO.: B24012/B126259

MATERIAL CERT REC'D: Yes
QUANTITY RECEIVED: 23
QUANTITY INSPECTED: 23
QUANTITY REJECTED: 0

THICKNESS ORDERED: 445
THICKNESS RECEIVED: 445
SHEET SIZE ORDERED: N/A
SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL	(Y) N	
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT MATERIAL	(Y) N	
CORRECT REF # TO LINK CERT	(Y) N	AT 263952 HT 263915
CORRECT MATERIAL IDENTIFICATION	(Y) N	D6020-160
CORRECT M# ON THE MATERIAL	(Y) N	B126259
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>9-88</u> DATE: <u>15-01-16</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

